

NTS Digital - Getting Started

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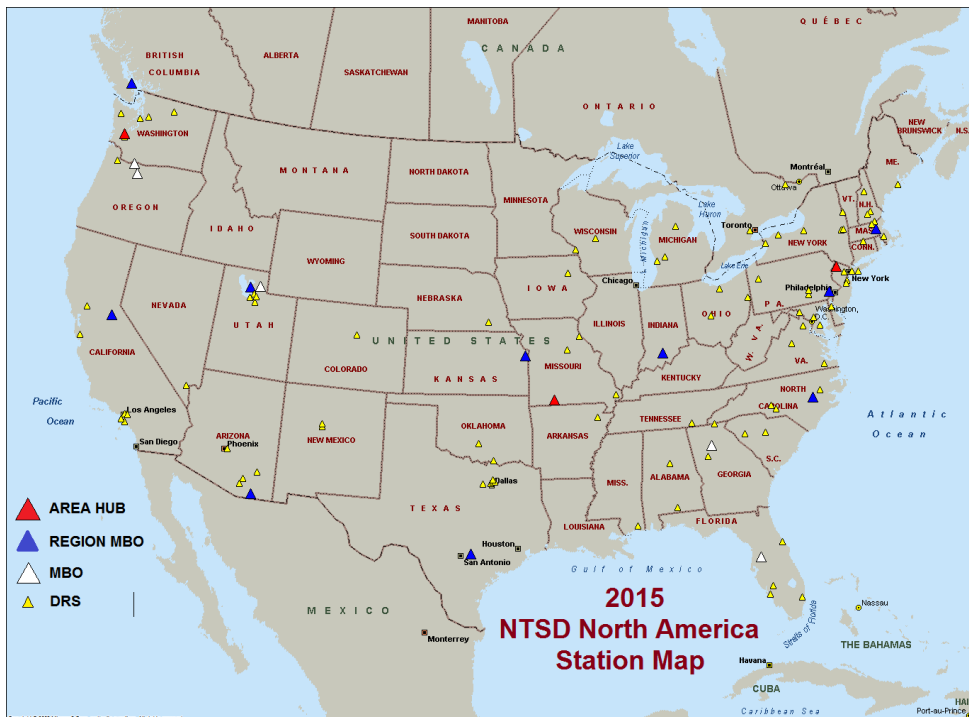
If you have been a participant on the Eastern MA 2 Meter Traffic Net for any length of time you may have heard references about a "Bulletin Board" that messages are being posted to. The bulletin board is part of a digital radio system used to pass traffic. It is known as the National Traffic System - Digital or NTSD for short.

Working with NTSD can be rewarding and fun. It takes the operator in to new areas of the hobby that he or she may not be familiar with. This article is meant to answer some of the basic questions you may have about NTSD as well as things to consider before setting up your station for NTSD.

NTSD Overview

NTSD consists of a cadre of fully automated store and forward bulletin board type systems known as Mail Box Operations (MBO) or hubs. These operate on HF using high speed protocols such as Pactor or VHF using packet on a 24/7 basis moving formal message traffic.

You may hear the terms MBO and BBS used during your work with NTSD. MBO typically refers to HF Pactor operations while BBS refers to VHF packet operations.



The goal of NTSD is to move that traffic via digital means to the closest point of delivery. At that point it is then removed from the automated system by operators known as Digital Relay Stations (DRS). The DRS then take this traffic to the nets at region, section, and local levels for any additional relay and ultimate delivery.

Your Objective

Before getting in to the discussion of setting up your station for NTSD, it is helpful to understand what your objective is.

Your objective is to get your station to be able to communicate to the KW1U Bulletin Board. This can be done via HF or VHF or both. Your station may connect directly with the KW1U Bulletin Board or you may connect via a Digital Repeater also known as a digipeater.

Digital NTS

NTSD requires the use of a hardware device known as a Terminal Node Controller (TNC) or TNC. Using cables, the TNC connects between your computer and your radio allowing you to handle traffic digitally using software on your computer. If you are committed to NTS and want to add digital to your list of skills, a TNC can be had for as little as \$15.00. More on that later.



A type of TNC

For most of us, our role in the NTSD system is as a Digital Relay Station (DRS). If you are a member of the ARRL you can receive an appointment as an ARRL Digital Relay Station. It won't get you a cup of coffee but it is a nice skill to add to your NTS and Amateur resume!

Considerations for running NTSD

There are factors that you need to consider and be prepared for before setting your station up for NTSD. There are also some small expenses involved in the purchasing of cables, etc.

1. Station Grounding

Proper RF grounding for your station is critical to operate digital. The TNC you receive may not have a ground connection. If that is the case, find a screw on the chassis, remove the paint around the screw to the bare metal and use that as the attachment point to your RF ground system.

2. Frequencies to Use

Connecting to the KW1U Bulletin Board can be accomplished directly from your station on various HF or VHF frequencies. If a direct connection is not possible there are digipeater available to connect through. Digipeater's are used for VHF packet only.

Ask KW1U for the frequencies used for the Eastern MA NTSD system. It is a good idea to monitor them for an evening or two to see if you can hear any traffic (sounds) and how strong the signal is. That may influence your decision on the best frequencies to use and how to connect.

3. Understanding your Radio

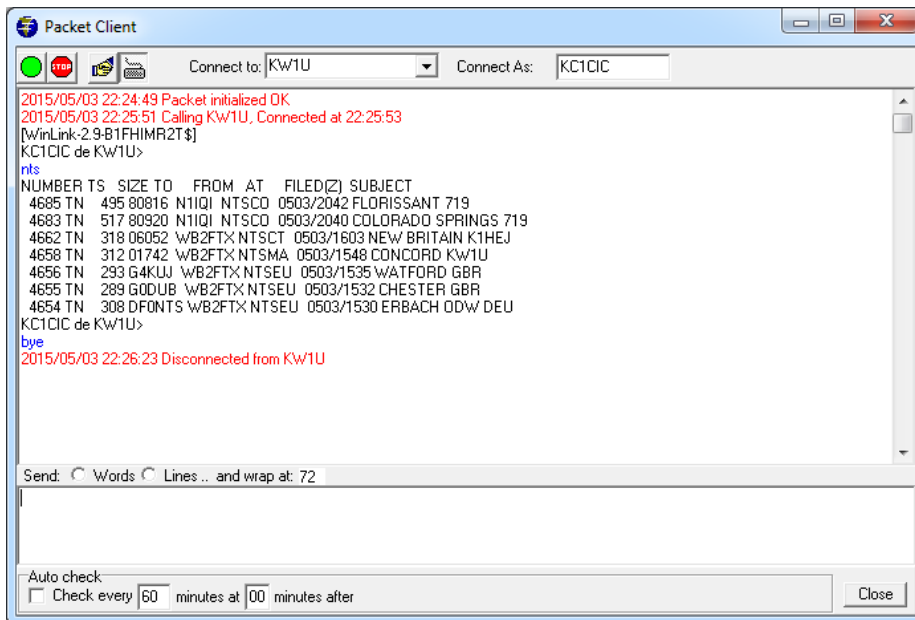
Having a good understanding of your radio is very helpful. If you don't have the manual for your radio, go out to the web and try to download a copy.

Depending on the software option(s) you use, your radio will need to be put in a data mode. On HF for example, your radio may need to be in "Data-USB" mode but for VHF it may need to be in "Data-FM" mode. The radio's manual will come in handy for this.

4. Your Computer (Mac/PC/Linux)

You do not need a powerful computer for NTSD but it does need to be reliable. Part of the NTSD configuration requires the installation of software packages - all of which are free. What software you install depends on how you operate your station.

AirMail is the software program recommended for your NTSD communications sessions. With AirMail you have the ability to connect to the MBO via HF or BBS via VHF. AirMail can also be used to send emails by radio. Some areas incorporate this function in their NTSD operations. If yours does not, it is yet another fun aspect of amateur radio that you could experiment with.



AirMail provides a connection between your computer via the serial cable and the TNC which controls your radio.

Using AirMail you will initiate a connection to the KW1U BBS. Once connected you will issue commands to list, accept and send traffic.

View of AirMail Packet Client listing NTS Traffic

Moving Forward

If you've gotten to this point in the article and are still excited about becoming a Digital Relay Station then you can request a free TNC through the NTS Loaner Program. The TNC is yours to keep for as long as you remain active in NTS. There is a \$15.00 flat fee to ship the TNC to your location. New TNCs retail for several hundred dollars so this is a real bargain. Please consider including a donation with the shipping fee to help keep TNCs available for other stations.

You must send an activity log in each month of your Digital Traffic activities. This log is separate of the one you may keep with your regular voice or CW message handling. Failure to send in your Digital Activity log could nullify your TNC loaner agreement.

What you will need

To start the process of setting up your station send an email to David Struebel at wb2ftx@optonline.net David is the Eastern Area Digital Coordinator for NTSD.

David will reply to you with the type of TNC he has available and what kind of cables you will need to purchase for it. He will also send you the links to order the specific cable(s) you will need.

You typically need to purchase:

- The AC power adapter for the TNC
- A serial cable and USB adapter if your computer does not have a 9-pin serial port
- A control cable specific to the TNC assigned to you and the make and model of radio you will be using.

This was about \$45.00 in total as I recall.

David will also send you links to the software he would like you to install as part of your stations initial NTSD configuration. The software packages are *Skype* and *Team Viewer*. Both are free. You will need to create a *Skype* account.

For *Skype* you do not need to purchase a camera. It is just a convenient way for David to communicate with you. *Team Viewer* is a way for David to directly access your desktop to help set up the software program(s). Specifically he needs access to the terminal emulator program you had installed.

In Conclusion

I hope you have found the information in this document useful in deciding and preparing to configure your station NTSD. If you have any questions that I can answer before requesting your TNC please contact me or Marcia.

I would like to thank Marcia Forde KW1U and David Struebel WB2FTX for their advice, feedback and support in getting this document published. It is very much appreciated!

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